Unit 2 Review
(Chapters 3-6)

1. Graph $3x - y = 1$.

$y = 3x - 1$

$y = mx + b$

$3x - x = 1 \qquad m = 3$

$-1 + y \qquad + y - 1$

$b = -1$

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$3x - 1 = y$
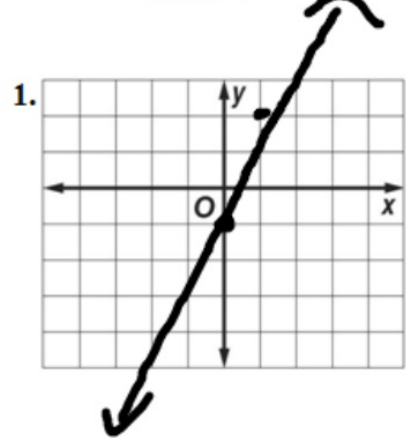
1.

2. Solve $4x + 9 = 4x + 13$.

$-4x \quad -4x$

$\rightarrow 9 = 13$

2. **No solution**

3. Find the value of r so that the line through $(2, -3)$ and $(-4, r)$ has a slope of $-\frac{1}{2}$.

3. **$r = 0$**

$\frac{-3-r}{2-(-4)} = \frac{-1}{2}$

$\frac{-3-r}{2+4} = \frac{-1}{2}$

$\frac{-3-r}{6} = \frac{-1}{2}$

$-6 = -6 - 2r$

$+6 \quad +6$

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$0 = -2r$

4. A giraffe can travel 800 feet in 20 seconds. Write a direct variation equation for the distance traveled in any time.

y x

$y = kx$ $\dfrac{800}{20} = 4 = k$

4. $\underline{\quad y = 4x \quad}$

5. Find the 25th term of the arithmetic sequence with first term 7 and common difference -2.

$d = -2$ $\underline{\quad -41 \quad}$

$n = 25$

$a_n = a_1 + (n-1)d$

$a_{25} = 7 + (25-1)(-2) = 7 - 48$

5. $\underline{\qquad\qquad}$

6. Write an equation of the line whose slope is 2 and whose y-intercept is 9.

$y = mx + b$

$x +$

6. $\underline{\quad y = 2x + 9 \quad}$

7. Write an equation of the line that passes through $(-1, -7)$ and $(1, 3)$.

$\dfrac{3-(-7)}{1-(-1)} = \dfrac{10}{2} = 5 = m$

$y = mx + b$

$3 = 5(1) + b$

$3 = 5 + b$

$b = -2$

7. $\underline{\quad y = 5x - 2 \quad}$

8. $\underline{\qquad\qquad}$

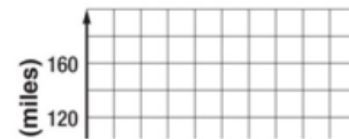**9.** Write the slope-intercept form of an equation of the line that passes through $(-2, 0)$ and is parallel to the graph of $y = -3x - 2$.

9. $\underline{\qquad\qquad}$

10. The table below shows the distance driven during four different trips and the

(miles)

160

120

$$Ax + By = C$$

2

8. Write $y - 4 = -\frac{3}{2}(x + 6)$ in standard form.

$$2y - 8 = -3(x + 6)$$

$$2y - 8 = -3x - 18$$

8. $\underline{3x + 2y = -10}$

9. Write the slope-intercept form of an equation of the line that passes through $(-2, 0)$ and is parallel to the graph of $y = -3x - 2$.

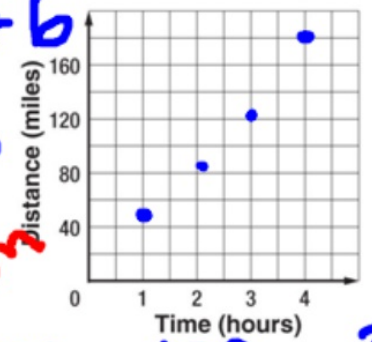**9.** $\underline{y = -3x - 6}$

$$m = -3 \qquad 0 = -3(-2) + b \qquad 0 = 6 + b$$
$$-6 \quad -6$$

$$b = -6$$

10. The table below shows the distance driven during four different trips and the duration of each trip. Draw a scatter plot and determine what relationship exists, if any, in the data. Write an equation for a line of fit for the data.

Time (hours)	1	2	2.5	4
Distance (miles)	50	85	120	180

positive correlation

10. $y = \dfrac{130}{3}x + \dfrac{20}{3}$

Solve each inequality.

12. $4x - 5 < 7x + 10$

$-15 < 3x$
$-4x \quad -4x - 10$

$\dfrac{-15}{3} < \dfrac{3x}{3}$

13. $2(5a - 4) - 3(6 + 2a) \le 6$

$10a - 8 - 18 - 6a \le 6$

$4a - 26 \le 6$
$+26 \quad +26$

$4a \le 32$

Solve each compound inequality.

14. $5 < 2t + 7 < 11$

$-7 \quad -7 \quad -7$

$\dfrac{-2}{2} < \dfrac{2t}{2} < \dfrac{4}{2}$

$-1 < t < 2$

15. $13 < 4 - 3v$ or $2v - 14 > 8$

$-4 \quad -4$

$\dfrac{9}{-3} < \dfrac{-3v}{-3}$

$-3 > v$

$v < -3$ or

$+14 \quad +14$

$\dfrac{2v}{2} > \dfrac{22}{2}$

$v > 11$

12. $\underline{ x > -5 }$

13. $\underline{ a \le 8 }$

14. $\underline{ -1 < t < 2 }$

15. $\underline{ v < -3 \text{ or } v > 11 }$